

Title (en)
HYSTERETIC BOOST CONVERTER WITH INDUCTOR PEAK CURRENT GEAR-SHIFTING

Title (de)
HYSTERESE-AUFWÄRTSWANDLER MIT SCHALTUNG DES INDUKTIVITÄTSPITZENSTROMS

Title (fr)
CONVERTISSEUR ÉLÉVATEUR À HYSTÉRÉSIS AVEC CHANGEMENT DE VITESSE DE COURANT DE CRÊTE DE BOBINE D'INDUCTION

Publication
EP 3973627 A4 20220831 (EN)

Application
EP 20791057 A 20200413

Priority

- US 201916384041 A 20190415
- US 2020027944 W 20200413

Abstract (en)
[origin: US2020328679A1] An electronic device has a DC/DC boost converter that includes a power NFET. The power NFET is coupled between a first pin, which can be coupled to a battery through an inductor, and a second pin that can be coupled to a ground plane. A switch-node is coupled to a third pin, which can be coupled to a diode to provide a boosted output voltage. A gate driver can receive a FET-on signal and drive a gate of the power NFET. A digital logic circuit provides the FET-on signal and includes an Ipeak gear-shifting circuit that dynamically changes the value of a peak inductor current responsive to one or more determinations that are related to one of the boosted output voltage and a switching frequency of the DC/DC boost converter.

IPC 8 full level
H02M 3/156 (2006.01); **G08B 17/10** (2006.01); **H02M 1/00** (2006.01); **H02M 1/42** (2007.01); **H02M 3/157** (2006.01)

CPC (source: EP US)
G01N 33/004 (2013.01 - EP US); **G01N 33/0063** (2013.01 - EP US); **H02M 1/0025** (2021.05 - EP); **H02M 1/08** (2013.01 - US); **H02M 1/4225** (2013.01 - EP); **H02M 3/156** (2013.01 - EP); **H02M 3/157** (2013.01 - EP US); **H02M 3/158** (2013.01 - EP); **G08B 17/10** (2013.01 - EP); **G08B 17/11** (2013.01 - EP US); **H02M 1/0009** (2021.05 - EP); **H02M 1/0032** (2021.05 - EP); **Y02B 70/10** (2013.01 - EP)

Citation (search report)

- [XY] US 2007210772 A1 20070913 - SAWTELL CARL K [US]
- [X] EP 3396835 A1 20181031 - MITSUMI ELECTRIC CO LTD [JP]
- [X] EP 2731247 A1 20140514 - DELTA ELECTRONICS INC [TW]
- [Y] US 2015311795 A1 20151029 - YANG XIPING [US], et al
- [Y] US 2016268892 A1 20160915 - GUPTA VISHAL [IN], et al
- [Y] US 5966078 A 19991012 - TANGUAY WILLIAM PETER [US]
- See also references of WO 2020214530A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
US 11205961 B2 20211221; US 2020328679 A1 20201015; CN 114375539 A 20220419; EP 3973627 A1 20220330; EP 3973627 A4 20220831; WO 2020214530 A1 20201022

DOCDB simple family (application)
US 201916384041 A 20190415; CN 202080040901 A 20200413; EP 20791057 A 20200413; US 2020027944 W 20200413